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Synthesis and characterization of biopolymers used as bioactive food packages, obtained from organic wastes and starch

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Currently, finding new polymeric materials that could replace those conventionally used in manufacture of packaging obtained from petroleum derivatives, is a huge impact subject of research. In this work, biopolymers were synthetized using organic wastes, to obtain starch with disrupted molecular chains which confers it thermoplastic properties. The biopolymers showed broad range of mechanical properties as function of the proportions and type of organic wastes and commercial starch. Also, different natural products and wastes containing antiseptic substanceswhich have already been tried as natural fungal inhibitors i.e garlic (*Allium sativum*) and watermelon seeds (*Citrulluslanatus*), where employed in the biopolymers fabrication process in order to develop anti-fungal activity food packaging systems. Strawberry was used as host fruit because of its occurrence an importance in Colombian fruits market.The morphology of polymeric productos was evaluated by SEM and AFM and texture, particle size strength and elasticity properties were correlated with mechanical properties obtained from a Universal Testing Machine.,

The project makes part of an educational program called “Tecnoacademia”, managed by “Servicio Nacional de Aprendizaje SENA-Colombia”, whose main objective is to train kids studying in Secondary Schools from vulnerable areas of Colombia. The management of organic wastes in the area of influence of “Tecnoacademia Nodo Cazucá” presents deficiencies in its correct disposal and management. As a consequence it is expected this work to positively impact the environment, economy and community of “Soacha and Cazucá”. Moreover, organic wastes with high content of starch and cellulose were obtained from formation and educational Technical and Technological programs of cooking (“Auxiliaren Cocina Técnicoen Cocina”).

Biography:

July Alexandra Rincón is a Chemical Engineering Specialist in Project Management, four years of experience as Innovation Manager in Nanotechnology in “Tecnoacademia” a program from “SENA-Colombia”. In that program SENA aims to motivate high school students coming from vulnerable areas of the country, not only to learn complex engineering and science subjects as nanotechnology, but also the rigorousness and discipline of scientific and technological research. July Alexandra Rincón have training in quality management and innovation process, and also July Alexandra Rincón have experience with materials characterization techniques.